

Safety and Environmental Management Program (SEMP) Manual

Taylor Energy Company

Prepared by:

Paragon Engineering Services, Inc.
13939 Northwest Freeway, Suite 121
Houston, TX 77042-5196

phone: (713) 462-8828
fax: (713) 462-6524

Paragon Job Number 94540

Safety and Environmental Management Program (SEMP) Manual

Table of Contents

<u>Section</u>	<u>Page</u>
1. Introduction	2
2. Safety and Environmental Information	3
3. Hazards Analysis	7
4. Management of Change	11
5. Operating Procedures	16
6. Safe Work Practices	19
7. Training	21
8. Assurance of Quality and Mechanical Integrity of Critical Equipment	28
9. Pre-Start-Up Review	39
10. Emergency Response and Control	41
11. Investigation of Incidents	44
12. Audit of Safety and Environmental Management Program Elements	46

1. Introduction

Purpose

Taylor Energy Company fully recognizes the value of maintaining a comprehensive Safety and Environmental Management Program (SEMP) for its offshore production platforms.

This manual describes Taylor's overall SEMP, in accordance with American Petroleum Institute (API) Recommended Practice (RP) 75, "Recommended Practices for Development of a Safety and Environmental Management Program for Outer Continental Shelf (OCS) Operations and Facilities," and RP 14J, "Recommended Practice for Design and Hazards Analysis for Offshore Production Facilities."

Company-wide documentation

Taylor will maintain the following company-wide SEMP-related documents in addition to this manual:

- *Safety Manual*
 - *Safe Drilling and Workover Practices Manual*
 - *Safety Handbook*
 - *Quality Assurance Manual*
-

Site-specific documentation

For each facility, Taylor will maintain specific safety and environmental information (discussed in Section 2) and operating procedures (discussed in Section 5). This information will be included in each facility's *Safety and Environmental Information Manual* and *Operating Procedures Manual*. Mechanical integrity data records (discussed in Section 8) will also be maintained for each facility.

SEMP documents pertaining to each manned facility will be retained at each facility, while SEMP documents pertaining to each unmanned facility will be retained at the manned facility or Field Office for each facility.

Covered facilities

This SEMP will apply to the following Taylor facilities:

- Matagorda Island 665 "A"
 - Mississippi Canyon Block 20 "A"
 - South Marsh Island 27 "A"
 - South Marsh Island 69 "B"
 - South Marsh Island 72 "C"
 - South Marsh Island 73 "A"
 - Vermilion 191 "C"
-

2. Safety and Environmental Information

Policy

SEMP implementation requires extensive process, environmental, mechanical, and facilities design information. The required information is site-specific and will be compiled for each covered facility.

Responsibility

The Field Foreman is responsible for maintaining up-to-date safety and environmental information for each facility. In this capacity, the Foreman will incorporate the results of any relevant management of change activities (see Section 4) into the safety and environmental information.

Documentation

For each facility, a complete set of safety and environmental information will be maintained in a *Safety and Environmental Information Manual*, which will be maintained and updated for the life of the facility. Each manual will be readily available at the manned platform or the Field Office for the facility, and a copy of each will be maintained at Taylor's New Orleans office.

Types of information

Taylor will maintain the following types of information for each facility:

- Environmental information
 - Mechanical design information
 - Process safety information
 - Layout information
 - Fire protection and safety equipment information
 - Chemical safety information
-

Continued on next page...

2. Safety and Environmental Information (continued)

Environmental information

Information will be maintained to address the environmental hazards that may be present during the design, construction, start-up, operation, inspection, and maintenance of offshore facilities. This information will include the following:

- quantities and possible effects of environmentally hazardous substances such as hydrogen sulfide (H₂S), chlorine, ammonia, hazardous chemicals, heat transfer fluids, molten sulfur, and naturally occurring radioactive material (NORM). This information is included in Taylor's Plan of Exploration and Development Operations and Coordination Document.
- special precautions required to prevent environmental damage; wind and current characteristics; distances from the facility to potentially affected environmentally sensitive areas; and information about the availability of equipment, materials, and organizations that can contain and mitigate the effects of oil spills. This information is included in Taylor's Oil Spill Contingency (OSC) Plan.
- descriptions of environmental protection systems, including drain systems, water treatment systems, secondary containment and collection systems, and allowable limits for discharges. This information is included in Taylor's National Pollutant Discharge Elimination System.

Process and mechanical design information

Process and mechanical design information forms the basis for SEMP elements such as hazards analysis, management of change, training, and operating procedures. The following information should be maintained for each facility:

- simplified piping and instrument diagrams (P&IDs) which should show the following, as a minimum:
 - all equipment
 - all interconnecting lines (process, relief, vent, and drain systems)
 - control valves and controllers
 - relief valves and their set points
 - manual and check valves
 - shutdown valves
 - safety shutdown and alarm sensors
 - sizes and pressure ratings of equipment and piping systems
 - well safety shutdown systems
 - process design flow rates, pressures, temperatures and, if necessary, fluid properties

Continued on next page...

2. Safety and Environmental Information (continued)

Process and mechanical design information (continued)

(Note: P&IDs may also show utility systems, instrument hookup details, line numbers, valve types, instrument tag numbers, or other such information, however, it is not necessary to create this information if it does not exist.)

- relief systems' design bases. Sufficient information will be maintained to ensure that each relief system is adequately sized. This information should include valve type, body size, orifice size, and the basis for valve sizing. Such information may be included on a separate form. An isometric diagram of each relief system will also be maintained.
-

Process safety information

Process safety information will be presented on SAFE Charts and Safety Analysis Flow Diagrams that are prepared in accordance with API RP 14C, "Recommended Practice for Analysis, Design, Installation, and Testing of Basic Surface Safety Systems for Offshore Production Platforms." All installed devices that are listed on the SAFE Charts will be shown on the simplified P&IDs.

The following additional information will also be maintained:

- concentrations of acid gas (H₂S and CO₂)
 - safe upper and lower operating limits for process variables such as temperatures, pressures, flows, and compositions. Some of this information will be shown in the monthly "Test Data, Operating Conditions and Maintenance Records of Safety Devices."
-

Fire protection and safety equipment information

Drawings which show the locations of the following will be maintained:

- all major process, utility, and life support equipment
 - quarters
 - risers
 - escape paths
 - evacuation equipment
 - fire and blast walls
-

Continued on next page...

2. Safety and Environmental Information (continued)

Fire protection and safety equipment information (continued)

- electrical area classifications
 - protection systems (fire extinguishers, firewater pumps, deluge areas, hose reels, monitors, fire and gas detectors, and fire alarm stations)
 - safety equipment (emergency shutdown (ESD) stations, life-jacket boxes, ring buoys, life rafts, escape devices, personal breathing apparatus, and fire blankets)
-

Chemical safety information

Safety data should be maintained for chemicals used in the facility. This data will be presented on Material Safety Data Sheets (MSDSs) that are maintained in accordance with Taylor's Hazard Communication (HazCom) Program, which is discussed in the *Safety Manual*.

3. Hazards Analysis

Policy

Hazards analyses will be performed for each facility that is covered by Taylor's SEMP. These analyses will identify, evaluate, and reduce the likelihood or minimize the consequences of uncontrolled releases of process fluids and other safety or environmental incidents.

Responsibility

The Operations Manager is responsible for the scheduling, execution, and follow-up of each hazards analysis.

Team

Hazards analyses will be conducted by a team having at least two members. The team leader should be knowledgeable in the methodology, either by training or practice. The team should include at least one member from operations who is familiar with the facility being analyzed. The team may also include engineering, safety, environmental and other specialists as needed.

The Operation Manager will determine the members of the team for each hazards analysis. The size and makeup of the team will be appropriate to the complexity and risk of the particular facility.

Methodology

Taylor will use a checklist methodology in each hazards analysis to assure compliance with standard industry practices for production facilities in the Gulf of Mexico OCS. Additional methodologies (such as a What If Analysis) may be recommended by the Hazards Analysis Team to address particularly complicated or serious potential hazards.

At the discretion of the Operations Manager, a preliminary review for compliance with the checklist may be made individually by members of the team. Then, the full team will be assembled to discuss those findings and complete the analysis. All conclusions and recommendations of the hazards analysis shall be the result of the full team study.

The team leader is responsible for preparing a report of the hazard analysis. The report will present the hazards that were identified, the recommended actions to mitigate the hazards, and a qualitative assessment of the risk level of the identified hazards.

Continued on next page...

3. Hazards Analysis (continued)

**Methodology
(continued)**

The report will be submitted to the Operations Manager who will be responsible for addressing the findings and recommendations in the report. The Operations Manager will be responsible for the final resolution of the findings, implementing actions to address the findings, and communicating the resolution to all personnel affected by the actions.

Analysis updates

All hazards analyses will be reviewed and updated periodically. Each review will determine whether the most recent hazards analysis reflects the facility's current status.

For all facilities that are manned, that process toxic materials, or that are environmentally sensitive, hazards analysis reviews will be conducted within five years of the previous analysis. For all other facilities, hazards analysis reviews should be conducted within ten years of the previous analysis.

Documentation

The report of each hazards analysis that is performed on each facility will be kept on file at Taylor's New Orleans office for the life-of the facility. The report will be maintained for use in the periodic reviews as discussed above.

Initial schedule

All new facilities and modifications to existing facilities will undergo complete hazards analyses before start-up. The initial hazards analyses for Taylor's existing facilities will be performed in an appropriate order of priority, in accordance with Table 3.1 (Priority Ranking Matrix). Taylor's Operations Manager will establish priority rankings and schedules for performing the analyses. The following factors will be considered during the ranking process:

- areas with continuous offshore populations, such as major platforms with living quarters and clusters and complexes of platforms
 - inventories and flow rates of flammable or toxic materials or other materials that may constitute safety or environmental hazards
 - locations involving simultaneous operations such as producing-while-drilling, producing-while-working over, and producing-while-constructing above or below the waterline.
-

Continued on next page...

3. Hazards Analysis (continued)

Initial schedule (continued)

- facilities that remove natural gas liquids or handle hydrogen sulfide (H₂S).
 - facilities that are located near environmentally sensitive areas.
 - facilities with severe operating conditions such as high pressures, highly corrosive fluids, or conditions that may cause severe erosion or corrosion, such as abnormal sand production and high flow rates.
-

Guidelines

When performing a hazards analysis on a new or modified facility, Taylor personnel must pay special attention to the following:

- previous experience with a similar facility as a factor in assigning hazards analysis team members
 - changes in the design or the design team after the project is underway
 - unusual facility locations, designs, configurations, equipment arrangements, or emergency response considerations
 - any findings that should be brought to resolution before start-up or that require immediate attention
 - operating procedures and practices, including guidelines for simultaneous operations
-

Continued on next page...

Table 3.1 Hazards Analysis Priority Ranking Matrix

Priority Ranking Criteria	Platforms						
	Mat 665A	MC 20A	SMI 27A	SMI 69B	SMI 72C	SMI 73A	VER 191C
Fully-integrated manned platform							
Manned platform complex							
Unmanned platform							
Wellhead platform							
Gas production rate							
Oil production rate							
Gas compression							
Simultaneous operations							
High production or operating pressures							
H ₂ S > 10 ppm							
Oil storage							
Age of structure > 15 years							
Recent history of fires, explosions or accidents							
Proximity to environmentally sensitive area							
Priority ranking of structure*							

* Use the above criteria and any other pertinent information to determine the priority in which hazards analysis should be performed.

4. Management of Change

Policy

In order to provide for the safety of personnel, facilities, and the environment when changes or modifications are made, Taylor will implement comprehensive management of change procedures for all facilities covered by this SEMP.

The management of change procedures ensure that Taylor makes changes only after the consequences of such changes have been adequately evaluated. Management of change procedures also help to assure that safety and environmental information is kept up to date.

Emergencies

Changes intended to respond to emergency situations may be implemented immediately upon the approval of the Platform Lease Operator before the full written management of change procedures are completed. As soon as practicable after the emergency, the changes must be reviewed in accordance with the complete management of change procedure described below. The Platform Lease Operator is responsible for identifying which situations constitute emergencies.

Actions that do not require review

The following actions **do not** require management of change review:

- replacements in kind: the replacement of an item with another item that has essentially the same design specifications. Replacements in kind are discussed in detail below.
 - operating adjustments that are within established operating limits.
-

Replacements in kind

Replacements in kind are actions in which one item is replaced by an item which has essentially the same performance capabilities. The following are examples of criteria that must be considered in the determination of whether an action constitutes a replacement in kind:

- The equipment is of the same type or style - gate valve to gate valve, centrifugal pump to centrifugal pump, pneumatic controller to pneumatic controller, etc.
-

Continued on next page...

4. Management of Change (continued)

Replacements in kind (continued)

- The equipment is made of the same material: carbon steel to carbon steel, stainless steel to stainless steel (stainless steels must match). This guideline also applies to materials for equipment internals.
 - Pressure ratings are the same -- 150 lb. to 150 lb., 300 lb. to 300 lb., etc.
 - Performance characteristics are the same -- throughput capacity, differential head, horsepower rating, motor construction, etc.
 - Electrical equipment classifications are the same -- Class 1 to Class 1 Division II to Division II, Group D to Group D, etc.
 - Equipment is the same size -- 4 inches to 4 inches, 6 inches to 6 inches, etc.
 - Piping is the same schedule or thickness -- schedule 40 to schedule 40, 80 to 80, etc. Tubing diameter and thickness must be the same.
-

Types of changes

- Type A Changes (minor changes) are limited changes to the process, equipment or facilities which do not increase the facility's risk level.
- Type B Changes (major changes) are defined as the following: process equipment or facility changes that may increase the risk level of the facility; any changes in the operating organizational structure; any new acquisition of facilities. In short, Type B Changes are any changes that are not Type A Changes.

Type A and B Changes are discussed in detail below.

Type A Changes

Type A Changes (minor changes) meet the following requirements:

- They **do not** change more than a single process vessel or component.
 - They **do not** affect the following:
 - fire protection systems
 - the throughput of the process (net increase or decrease)
 - the control rooms, offshore living quarters, or exit routes such as stairs, ladders, or aisles
-

Continued on next page...

4. Management of Change (continued)

Type A Changes (continued)

- They **do not** involve changes in electrical classification or physical changes such as constructing walls, moving walls, etc.
 - They **do not** require the following:
 - additional safety devices or changes in SAFE Charts
 - additional secondary containment
 - additional utility support
 - additional equipment installation
 - additional training
 - They **do not** increase noise levels or result in operating temperatures, pressures, or flow rates that are beyond the limits shown in the *Safety and Environmental Information Manual*.
-

Type B Changes

Type B Changes (major changes) involve modifications that affect the facility's P&IDs and/or its safety and environmental information. New acquisitions of facilities and changes in operating organizational structure are considered to be Type B Changes. Type B Changes may require updating of P&IDs or other environmental information, changing operating procedures, or additional training.

Management of Change Form

The Management of Change Form shown in Table 4.1 should be used in the implementation of the management of change procedure for both Type A and Type B Changes.

Procedure

The following steps must be taken in the implementation of the Management of Change program:

1. Any employee (including contract employees) can recommend a change by filling in the appropriate sections of a Management of Change Form.
 2. Management of Change Forms originating in the field must be submitted to the Platform Lease Operator, the Field Foreman, and the Operations Manager for approval to begin the change.
-

Continued on next page...

4. Management of Change (continued)

**Procedure
(continued)**

3. The Field Foreman will indicate whether the proposed change is a Type A Change, a Type B Change, or and Emergency Change.
 4. Type A and Type B Changes must be approved by the Operations Manager before work associated with the change can begin.
 5. Management of Change Forms, if initiated in the New Orleans Office and approved by the Operations Manager, should be routed to the Field Foreman and Platform Lease Operator for signature and comment before proceeding.
 6. An Emergency Change can be initiated on the approval of the Platform Lease Operator, but the form must be forwarded to the Field Foreman as soon as possible and to the Operations Manager within 24 hours after the change is initiated. The Emergency Change will then proceed through the Management of Change procedures.
 7. When the Operations Manager approves the initiation of the change, he will indicate on the form which reviews and updates are required and assign a Management of Change Coordinator who will be responsible for tracking the change, completion of reviews, and documentation. The Coordinator may be the Platform Lease Operator, Field Foreman, Operations Manager, or other person assigned by the Operations Manager.
 8. The Coordinator will keep the original form and distribute copies to the indicated reviewers.
 9. After all reviews have been completed, the Management of Change Form will be signed by the Platform Lease Operator, Field Foreman, and Operations Manager to approve the change for start-up.
 10. Once the work is completed, the final copy of the completed Management of Change Form, along with any updates, should be sent to the Coordinator. The completed form will be kept on file at the appropriate manned platform for the life of the facility.
-

Table 4.1 Management of Change Form

Project Title: _____ AFE No.: _____
 Initiator: _____ Facility: _____
 Change is (circle one) Temporary Permanent Date: _____
 Time Period (if temporary): From: _____ To: _____

Description of change (Attach report, sketch, P&ID, etc. if needed for clarity): _____

Reason for making change: _____

This change is a : Type A Change Type B Change. Emergency Change

Approvals to begin:

	Signature	Date
Platform Lease Operator		
Field Foreman		
Operations Manager		

Note: If this is an Emergency Change, transmit this Management of Change Form to Operations Manager within 24 hours of initiating change.

Reviews and Updates (To be determined by Operations Manager)	Assigned to:	Completed	
		Signature	Date
* Required for Type B Change			
* Safety Review			
* Environmental & Regulatory Review			
P&IDs Update			
Electrical Systems Review			
* Process Hazards Analysis Review			
Safety Information Review			
* Operating Procedures Review			
Mechanical Integrity Review			
Training Requirements Review			
Emergency Procedures Review			
* Pre-Start-up Review			

Approvals to start-up:

	Signature	Date
Platform Lease Operator		
Field Foreman		
Operations Manager		

5. Operating Procedures

Policy

Written operating procedures will be prepared to promote the efficient and safe operation of each facility that is covered by Taylor's SEMP. These procedures will be kept up-to-date to reflect changes in the operations of the facility. These procedures will be site-specific for each facilities.

Responsibilities

- The Platform Lease Operator is responsible for identifying the operating procedures and systems that will be prepared and maintained for his facility. The Platform Lease Operator is also responsible for making sure that the procedures are reviewed periodically (see Scheduled reviews below).
 - The Operations Manager is responsible for the initial development of operating procedures for each facility.
 - The Field Foreman is responsible for maintaining and updating the *Operating Procedures Manual* for each of his facilities.
-

Documentation

For each facility, a complete set of operating procedures will be maintained in an *Operating Procedures Manual* which will be maintained and updated for the life of the facility. A complete copy of the manual will be readily available at the manned platform and the Field Office for each facility. A copy of each manual will also be maintained at Taylor's New Orleans office.

Development and format

The expertise of Taylor's operating personnel should be utilized in the initial preparation of each facility's procedures and in any revisions of the procedures.

For each facility, procedures will be written for each operating system of the process; for example, production separation, oil treating, produced water treating, gas dehydration, gas compression, etc. The operating procedures will list the steps to be taken to:

- start up and shut down the system
- monitor and control the system's normal operation
- respond to alarms and shutdowns

Operating procedures will also include a written description of the process, including any special or unique hazards, precautions, or other requirements.

Continued on next page...

5. Operating Procedures (continued)

Scheduled reviews

All operating procedures for a facility will be reviewed at least once per year. The reviews should confirm that the written procedures represent current operating practices and any changes made to the facility. As noted above, the Platform Lease Operator is responsible for making sure the procedures are reviewed.

Each review will be documented on the title sheet for each procedure (as shown in Table 5.1 in this section), which will be kept in the *Operating Procedures Manual*.

Continued on next page...

Table 5.1: Title Sheet for Operating Procedures

Operating Procedure: _____

Issue Date or Number: _____

Facility: _____

Responsible Person's Job Title: _____

Person Above Reports to: _____

Procedure Reviews:

Date Reviewed	Signature

6. Safe Work Practices

Policy

Taylor has developed written safe work practices to provide guidance for the safe conduct of its operations on all facilities covered by this SEMP. All activities at these facilities will comply with the written safe work practices. The practices apply to all people on Taylor facilities, including Taylor employees, contractors and their employees, and visitors.

The safe work practices are presented in the *Safety Manual* and the *Safe Drilling and Workover Practices Manual*. The pocket *Safety Handbook* contains selected general safety rules and information.

Responsibility

The Safety Manager is responsible for the preparation and revision of the manuals and the handbook that describe basic safe work practices, the Hazard Communication Program, and for the evaluation of contractor's safety programs.

Safety Manual

The *Safety Manual* presents safety rules and work practices for the safe construction, start-up, operations, inspection, maintenance, and modification of Taylor's facilities. A copy of the *Safety Manual* will be maintained on the manned platform that is associated with each facility. The manual should be available to employees at all times.

Safe Drilling and Workover Practices Manual

The *Safe Drilling and Workover Practices Manual* presents Taylor's requirements for safety in drilling and workover activities. This manual presents standards to be used by Taylor's Rig Site Supervisor to evaluate and audit drilling and workover contractors' safety programs. The Safety Manager is responsible for delivering a copy of the manual to the Rig Site Supervisor.

Safety Handbook

The *Safety Handbook* presents safety policies, work rules, and an overview of safe work practices. A copy of the handbook should be given to each employee and contractor employee.

Each employee will sign the acknowledgment page in the handbook. For Taylor employees, this page will then be kept in the employee's personnel file.

Contractor employees will acknowledge the receipt of a copy of the handbook by signing the orientation form, in accordance with Section 7 of this book.

Continued on next page...

6. Safe Work Practices (continued)

Hazardous materials

Taylor's Hazard Communication (HazCom) Program presents comprehensive guidance for the safe storage and handling of toxic or hazardous materials at Taylor facilities. The HazCom system is described in the *Safety Manual*.

The HazCom Program will be developed and maintained to meet the guidelines of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Contractor selection

Taylor will endeavor to use contractors who have a demonstrated commitment to the safety of their employees and the environment. To achieve this goal, Taylor will request that contractors submit specific performance information in their contract proposals. Such information may include the following:

- descriptions of the contractor's safety programs, including the following: accident investigation procedures, safety inspection procedures, safety meeting frequency and formats, safety incentive programs, and substance abuse prevention programs
- a description of the safety and environmental training that each contractor employee has received and the contractor's programs for periodic (refresher) training
- an outline of the contractor's initial employee safety orientation
- evidence of the existence of a disciplinary action procedure dealing with safety and environmental infractions
- Experience Modification Rates (EMRs) for Worker's Compensation Insurance for the previous three years
- OSHA-defined recordable injury and illness records for the previous three years

The Safety Manager will evaluate this information regarding contractors' safety programs. Approval of a contractor's safety programs will be valid for one year, after which the information must be updated and evaluated.

7. Training

Policy

All personnel at Taylor facilities covered by this SEMP plan will be trained to perform their functions in a manner that protects personnel, the environment, and equipment. This policy applies to Taylor's employees, contractor employees, and visitors on Taylor's facilities. Contractors are responsible for providing training for their employees prior to beginning work at Taylor facilities.

Taylor will comply with all training requirements set forth by governmental laws and regulations which are applicable to Taylor's SEMP covered facilities.

Taylor's training programs will include initial training and periodic refresher training.

Responsibilities

- The Safety Manager is responsible for developing and maintaining Taylor's training program.
 - The Field Foreman is responsible for ensuring the completion, documentation, and record-keeping of all training.
 - Taylor's Platform Lease Operator will give each contractor employee a safety orientation as described below. At that time, the contractor employee should receive a *Safety Handbook*.
-

Records

For each employee, records of all formal training, including safety orientation, initial training, job-specific training, and periodic training, will be kept in the employee's training file at the Field Office, and a copy will be sent to the Safety Manager. These records will indicate the type of training received and the date of training.

Training methods

Taylor's training system may incorporate API-recommended training modules and films. In addition, "hands-on" training methods should be applied. "On-the-job" training may also be conducted, provided that such training is completed under the supervision of knowledgeable operating and maintenance personnel.

Continued on next page...

7. Training (continued)

Safety orientation

All new Taylor employees and all contractor employees and visitors will receive a safety orientation when they arrive on Taylor's facility. The orientation will cover rules regarding safety, toxic or hazardous materials at the location, and emergency procedures.

Each individual will acknowledge that he or she has received and understood the orientation by signing a Safety Orientation Form (see Table 7.1 at the end of this section). The Field Foreman is responsible for sending the signed Safety Orientation Form to the Safety Manager, who will maintain a file in New Orleans.

Each new Taylor employee and contractor employee will receive a copy of the Taylor *Safety Handbook*. Each employee will sign a statement that says that he or she has read and understood the contents of the handbook.

Basic safety training

Each employee who will be working on a newly assigned facility (and each employee presently located at a facility at the time this SEMP is initiated) will be trained by the Field Foreman in an overview of the process and operating procedures presented in the facility's *Operating Procedures Manual*. This training will emphasize the specific safety and health hazards, procedures, and safe work practices that are applicable to the employee's job tasks.

New employees receive a walk-through of the facility. New employees will work with experienced employees until they can demonstrate their familiarity with the process.

At a minimum, all new employees will receive, as soon as practical, training that is equivalent to that recommended in the latest editions of the following:

- API RP T-1: "Recommended Practice for Training of Offshore Personnel for the First Time"
 - API RP T-7: "Recommended Practice for Training of Personnel in Rescue of Persons in Water"
 - API RP 14G: "Recommended Practice for Fire Prevention and Control on Open-Type Offshore Production Platforms"
 - 30 CFR 250 Subpart C: "Pollution Prevention and Control"
-

Continued on next page...

7. Training (continued)

Job-specific training

As applicable, each employee or visitor will receive job-specific training as follows:

- Each employee will receive instruction in the operating procedures that pertain to the employee's job responsibilities.
- Employees who maintain and test safety valves and controls will receive safety and anti-pollution device training in accordance with the latest edition of API RP T-2: "Recommended Practice for Qualification Programs for Offshore Production Personnel Who Work with Anti-Pollution Safety Devices."
- Employees who operate and maintain platform cranes will receive training in accordance with the latest edition of API RP 2D ("Recommended Practice for Operation and Maintenance of Offshore Cranes") and 30 CFR 250.20 (c) ("Crane Operations.")
- Employees who are involved in well control will receive training in accordance with the latest editions of the following:
 - API RP T-6: "Recommended Practice for Training and Qualification of Personnel in Well Control Equipment and Techniques for Completion and Workover Operations on Offshore Locations"
 - API RP 59: "Recommended Practice For Well Control Operations"
 - 30 CFR 250, Subparts D ("Drilling Operations"), E ("Well-Completion Operations"), F ("Well-Workover Operations"), H ("Production Safety Systems"), and O ("Training")
- Employees who are involved in the drilling of wells terminating in or passing through horizons containing hydrogen sulfide (H₂S) will receive training in accordance with the latest editions of the following:
 - API RP 49: "Recommended Practices for Drilling and Drill Stem Testing of Wells Containing Hydrogen Sulfide"
 - 30 CFR 250 Subpart D: "Drilling Operations"

Continued on next page...

7. Training (continued)

Job-specific training (continued)

- Employees who are involved in production operations in which hydrogen sulfide is present will receive training in accordance with the latest editions of the following:
 - API RP 55: “Recommended Practice for Oil and Gas Producing and Gas Processing Plant Operations Involving Hydrogen Sulfide”
 - 30 CFR 250, Subpart H: “Production Safety Systems”
-

Demonstrating knowledge

To assure that operating personnel are familiar with the piping and instrumentation in their assigned work areas and can isolate a problem in the event of an emergency, employees will demonstrate their knowledge as follows:

- Operators will walk through the facility and explain the flow scheme to the Field Foreman or the Platform Lease Operator.
- The Platform Lease Operator must draw a flow schematic or write a process description. This diagram or description will be checked by the Field Foreman.
- Mechanics must demonstrate to the Field Foreman their knowledge of the process and procedures pertaining to the compressors (including gas flow from the bulk separators to the compressor plant outlet) and the fuel system.
- No other special training is required for mechanics or electricians, but these personnel may be sent to specific equipment manufacturers' schools or technical schools, as required by specific equipment needs. Any prior experience with the equipment should be taken into account.

Successful completion of the above requirements will be documented. The Field Foreman will assure that the initial training is accomplished, document the completion of the training in the employee's training file at the Field Office, and send a copy of the documentation to the Safety Manager.

Continued on next page...

7. Training (continued)

Periodic training

Periodic refresher training will be provided in the Basic Safety and Job-Specific Training topics presented above in this section. The purpose of the refresher training is to maintain the employee's level of competence and to update the training for changes or advancements in practices.

The frequency of periodic training will be commensurate with the complexity of the equipment and systems as well as the risks associated with the operation of the facility.

Safety meetings

Regularly scheduled formal safety meetings should be held at each manned platform at least weekly. All Taylor employees and long-term contractor employees will attend the safety meetings.

During the safety meetings, information and discussions should review the following:

- material from the Taylor *Safety Manual*
- material from the Safety and Environmental Information
- material from the Safety Manager's resources
- observed hazards, near-miss incidents, and accidents
- suggestions for improving safety

Additional safety meetings may be held at the Field Foreman's discretion for any special needs, such as the need to rapidly disseminate safety information or to review a new or particularly hazardous operation.

All safety meetings will be documented by the Platform Lease Operator. A copy of the reports will be kept on file at the manned platform and at the Safety Manager's office for three years. The documentation should report the following:

- location
 - date
 - topics discussed
 - names of attendees
-

7. Training (continued)

Contractor training

Taylor's contractors are responsible for training their personnel in the work practices necessary for performing their job functions in a safe and environmentally sound manner.

Taylor's Safety Manager will determine the adequacy of such training by obtaining a description of the types of safety, health, environmental, and fire training that the contractor's personnel have received or will receive prior to starting work on Taylor's facility. The training received by contractor's personnel should be at least as thorough as that which is received by Taylor's employees.

The above policy does not apply to contractors who provide incidental services that do not influence the operation of the facility (e.g., janitorial services, food and drink services, laundry, delivery, etc.).

Taylor's Platform Lease Operator will give each contractor employee a safety orientation as described above. At that time, the contractor employee should receive a *Safety Handbook*.

Contractor employees will be assigned to work with a Taylor employee until the contractor employee demonstrates his understanding of the hazards of the process and his job functions to the satisfaction of the Platform Lease Operator.

Contractor employees at a Taylor facility for project work will be supervised by a Taylor employee. Before the work begins, a pre-job safety meeting will be held to review the work plan and the hazards and safeguards of the work.

Contractor employees who work on a long-term basis should receive the same training as Taylor employees (including refresher training) and will attend Taylor's safety meetings.

Continued on next page...

Table 7.1: Safety Orientation Acknowledgment Form

Each individual working on or boarding a Taylor Energy Company (TEC) platform or project will complete this form with an authorized TEC representative.

Name: _____ Date: _____
 Employer (if not TEC): _____ Phone: _____
 Departure Date (if applicable): _____ via (circle one): helicopter boat

Checklist (to be initialed by the employee/visitor and a TEC representative):

	Employee/Visitor	TEC Rep.
Has received and understood the <u>Safety Handbook</u>	_____	_____
Know who is in charge and report to that person	_____	_____
Emergency signals explained (if applicable)	_____	_____
Emergency stations (directions)	_____	_____
Fire fighting stations (directions)	_____	_____
Emergency shutdown system details (if installed)	_____	_____
Life vest location and wearing requirements	_____	_____
Escape routes and their locations	_____	_____
Abandoning the platform (when, where, how)	_____	_____
Smoking/non-smoking rules (explain safe areas)	_____	_____
Hard hat, safety shoe, glove, and eye protection requirements	_____	_____
Reporting leaks or environmental hazards	_____	_____
Reporting and correcting safety hazards (immediately)	_____	_____
Communications available, rules for use (or non-use)	_____	_____
TEC safety rules, meeting times	_____	_____
Observance and obedience regarding signs, safety rules	_____	_____
Living quarters and galley rules; meal times	_____	_____
Work schedule and break times	_____	_____
Buddy system rules	_____	_____
Illegal drug policies	_____	_____
Prohibited items; for example, alcohol, guns, etc.	_____	_____
Contact lens policy (wears - doesn't)	_____	_____
Prohibition of pollution	_____	_____
Cautions regarding control/machinery operation	_____	_____

Prescription medication (circle one): takes doesn't
 List of prescription medications and possible adverse reactions: _____

Note: non-prescription medicine that may cause drowsiness during working hours is not allowed.

I have been briefed and thoroughly understand the TEC rules that I have initialed above. I agree to abide by these rules during my tenure on this and other TEC platform/projects. I understand that a violation of these rules is sufficient reason for immediate dismissal from the platform/project.

Employee/visitor's signature: _____ **Date:** _____

TEC representative's signature: _____ **Date:** _____

8. Assurance of Quality and Mechanical Integrity of Critical Equipment

Policy

Taylor will design, procure, construct and install all critical equipment in accordance with the company's *Standard Specifications Manual* or other specifications that are approved by the Operations Manager.

Taylor's program for assurance of quality and mechanical integrity of critical equipment will cover the following areas: design, procurement, fabrication, installation, maintenance, and inspection and testing.

Critical equipment

Critical equipment is that equipment and systems that prevent or mitigate uncontrolled releases of hydrocarbons, toxic substances, or other materials that may cause serious environmental or safety consequences. Critical equipment items include the following:

- vessels
 - pumps
 - compressors
 - piping
 - relief systems
 - safety shutdown and alarm systems
 - electrical systems
 - fire fighting equipment
 - pollution control equipment.
-

Responsibility

The Operations Manager is responsible for implementing Taylor's program for assurance of quality and mechanical integrity of critical equipment.

Continued on next page...

8. Assurance of Quality and Mechanical Integrity of Critical Equipment

Assurance of Quality

New equipment

Policy:

Taylor will design, construct, test, and install all new critical equipment in accordance with the company's *Standard Specifications Manual* or other specifications approved by the Operations Manager. Taylor will perform inspections and tests in accordance with the Company's *Quality Assurance Manual* for all new equipment and all spare parts and maintenance equipment to ensure that the equipment meets design specifications and is installed in a manner that is consistent with specifications and manufacturers' instructions.

Deficiencies:

Deficiencies in equipment will be corrected before further use.

Documentation:

- Copies of the specifications that are used in designing and constructing new equipment and facilities will be kept on file at Taylor's New Orleans office for the life of the facility.
- For each inspection or test of new equipment, a Mechanical Integrity Inspection/Test Form such as that shown in Table 8.1 will be completed, and it will be kept on file at Taylor's New Orleans office.
- ASME certification records on pressure vessels will be kept on file at Taylor's New Orleans office as long as the respective vessels remain in service.

Continued on next page...

8. Assurance of Quality and Mechanical Integrity of Critical Equipment

Assurance of Quality (continued)

Existing equipment

Original documentation:

Documentation of the design of existing equipment is extremely difficult or impossible to obtain. Although this equipment was installed in accordance with "good oilfield practice," the documentation to prove that the equipment was designed and constructed according to a specific code or standard may no longer exist.

Policy:

To demonstrate that Taylor's existing equipment was designed and constructed safely, Taylor will rely on the "successful prior operating experience" of the equipment as discussed in API RP 75 and will follow these guidelines:

- It will be assumed that all ASME code vessels have been installed and pressure-tested according to the MAWP stamped on each vessel.
- Non-ASME-code vessels will be pressure-tested to 1.5 times MAWP in order to establish safe operating pressures. Safe operating pressures will be stamped on each vessel. The Field Foreman will assure that all non-code vessels are tested and stamped or removed from service by January 1, 1997.

Unless information indicates otherwise, Taylor will assume that all facility piping and pipelines are API 5L Grade B or A 106 Grade B, in accordance with long-standing industry practice. It will also be assumed that low-pressure lines are Schedule 40 or Standard Weight, whichever has a lower pressure rating, and that high-pressure lines are Schedule 80 or XH, whichever has a lower pressure rating. Where knowledge of past practices provide a reasonable expectation that piping has been hydrotested, the MAWP will be assumed to be the expected hydrotest pressure divided by 1.5. Where there is no knowledge of past practices or where such knowledge indicates that hydrotesting did not occur, lines operating at less than 50% of MAWP (derived from Table 8.2, which is based on ANSI B 31.3 and 31.8) will require no further testing. Other lines will be hydrostatically tested to 1.5 times MAWP or subjected to NDT testing (x-ray or ultrasonic) to assure weld integrity if hydrotest is not possible. The Field Foreman will assure that MAWP determinations are made by January 1, 1997.

Continued on next page...

8. Assurance of Quality and Mechanical Integrity of Critical Equipment

Assurance of Quality (continued)

**Existing
equipment
(continued)**

- It will be assumed that low-pressure flow lines that are made of oilfield tubing are suitable for service due to their extremely high MAWP, low operating pressure, and successful prior operating experience. High-pressure flow lines made of oilfield tubing will be hydrostatically tested to 1.5 times MAWP. The Field Foreman will assure that testing is done by January 1, 1997.

Documentation:

Any hydrotesting or non-destructive testing records required for documentation of suitability will be kept in the *Safety and Environmental Information Manual* at the manned platform for the facility and at Taylor's New Orleans office.

Table 8.1: Mechanical Integrity Inspection/Test Form

Date: _____

Facility: _____

Equipment Description: _____

Serial Number: _____

Description of Inspection or Test:

Results:

Person Performing Test: _____

Person Completing Form: _____

Table 8.2: MAWP of Piping And Pipelines

Size	Schedule	Wall Thickness (in)	MAWP (PSIG)	
			Piping ANSI B31.3 ¹	Pipelines ANSI B31.8 ²
1	40	0.133	2103	---
	80	0.179	3468	---
1 1/2	40	0.145	1672	---
	80	0.200	2777	---
2	40	0.154	1469	2723
	80	0.218	2489	3855
3	40	0.216	1640	2592
	80	0.300	2552	3600
4	40	0.237	1440	2212
	80	0.337	2276	3145
6	40	0.280	1206	1775
	80	0.432	2062	2739
8	40	0.322	1098	1568
	80	0.500	1864	2435
10	40	0.365	1023	1426
	80	0.594	1811	1953
12	Std	0.375	888	1235
	XS	0.500	1246	1647

1. Temperature Range: -20 to 400 °F

2. Temperature Range up to 250 °F
Construction Type Design Factor, F = 0.6

8. Assurance of Quality and Mechanical Integrity of Critical Equipment

Mechanical Integrity

Safety and environmental devices

Policy

The Field Foreman is responsible for inspecting the protection devices in accordance with the chart below. The inspections will be performed in accordance with API RP 14C.

Equipment

Inspection/Test Frequency

Subsurface safety valves	Annual
Surface safety valves	Every six months
Surface shutdown valves	Every six months
Relief valves	Annual

Surface shutdown and alarm sensors:

Pressure	Quarterly
Level	Quarterly
Temperature	Annual
Gas detection	Monthly
H ₂ S detection	Monthly
Fire (fusible plug)	Monthly
Fire (other)	Monthly

Documentation:

Documentation for the three most recent inspections of each device will be maintained at the manned platform associated with each facility. This documentation will include notices that specify the date by which the next inspection should be performed.

Continued on next page...

8. Assurance of Quality and Mechanical Integrity of Critical Equipment

Mechanical Integrity (continued)

Vessels, piping,
pumps, and
compressors

Policy:

Taylor's program to assure that hydrocarbons will be contained within piping and equipment is as follows:

Corrosion:

- Where operating experience shows that internal corrosion is not a problem, operating personnel will be instructed to perform visual checks for signs of internal corrosion whenever equipment is opened for maintenance. Operating personnel should also be instructed to perform visual checks for external corrosion. If there is no change in the process fluids (for example, increased sand or water production or increased H₂S or CO₂ production), no further inspection will be required.
- Where corrosion may be a problem, corrosion coupons will be installed, and an inhibitor program will be established. Corrosion rate will be monitored by the Field Foreman and the Operations Manager.
- Where the corrosion rate is significant, the Operations Manager will establish a program of ultrasonic testing to monitor the wall thickness of piping and equipment at risk to the corrosion. The frequency of testing will be based on the rate of corrosion and the remaining wall thickness.

Sand production:

Where there is evidence of sand production, operators will monitor wall thicknesses on the outside of bends in the flow lines and piping to the first production vessels. The Platform Lease Operators will monitor thickness annually, unless operating experience justifies a longer interval. The inspection data should be documented using the Mechanical Integrity Inspection/Test Form (Table 8.1).

Continued on next page...

8. Assurance of Quality and Mechanical Integrity of Critical Equipment

Mechanical Integrity (continued)

Vessels, piping, pumps, and compressors (continued)

Packing and seals:

- Platform Lease Operators will be instructed to visually inspect packing in compressors for leaks at least twice a day at manned facilities and whenever an unmanned facility is visited. Any leaks will be noted on the daily compressor reports.
 - Platform Lease Operators will be instructed to visually inspect pump packing and seals and centrifugal compressor seals for leaks. Leaks will be documented on the morning production reports. Packing and seals will be maintained in accordance with manufacturers' recommendations.
-

Electrical components

Inspections of the electrical systems at each location will be performed at least once every two years except as noted below. These inspections will involve the following:

- ensuring that classified areas' integrities are maintained
- ensuring that applicable codes and standards are being followed when modifications are made
- visually inspecting condition of ground connections and measuring grounding resistance
- visually inspecting condition of lighting systems (normal and emergency), wire or cable insulation, and motors, heaters and other loads
- inspecting, calibrating, and testing of power distribution equipment (circuit breakers, transformers, busbars, disconnect switches, motor starters, etc.); this will be performed annually.

Documentation:

Documentation of the most recent inspection will be maintained at the manned platform associated with each facility.

Continued on next page...

8. Assurance of Quality and Mechanical Integrity of Critical Equipment

Mechanical Integrity (continued)

Fire extinguishers **Monthly visual inspection:**

All fire extinguishers will be visually checked monthly to assure proper charge and operability. The Platform Lease Operator is responsible for this inspection and will report the status on the daily report.

Annual maintenance check:

The Field Foreman will arrange for an annual third-party maintenance check of the fire extinguishers. The Field Foreman will document this examination and maintain it for at least one year or the life of the fire extinguisher, whichever is shorter. The records will be maintained at the manned platform that is associated with the facility.

Hydrostatic testing:

A third party will hydrostatically test the fire extinguishers at the following intervals:

<u>Description</u>	<u>Interval (years)</u>
Soda, acid (stainless steel shell)	5
Cartridge-operated water and/or antifreeze	5
Stored-pressure water and/or antifreeze	5
Wetting agent	5
Foam (stainless steel shell)	5
Aqueous film forming foam (AFFF)	5
Loaded stream	5
Dry chemical with stainless steel	5
Carbon dioxide (CO ₂)	5
Dry chemical, stored pressure, mild steel, brazed brass or aluminum sheets	12
Dry chemical, cartridge or cylinder operated with mild steel shells	12
Halon 1211	12
Halon 1301	12
Dry powder cartridge or cylinder operated with mild steel shells	12

Continued on next page...

8. Assurance of Quality and Mechanical Integrity of Critical Equipment

Mechanical Integrity (continued)

Fire extinguishers (continued)

Documentation:

Documentation of each hydrostatic inspection will be maintained for the life of the unit or until the unit is re-tested, whichever is shorter. Copies of examinations and hydrostatic inspections will be maintained at the manned platform that is associated with each facility.

Pollution control equipment

Taylor is a member of Clean Gulf which is responsible for the inspection and maintenance of its pollution control equipment. Taylor's Oil Spill Contingency (OSC) plan describes the pollution control equipment that is available throughout the area.

Maintenance

Taylor will implement a maintenance program that will sustain ongoing mechanical integrity, enhance safety, and protect the environment. This program will include the following:

- procedures for maintaining equipment's mechanical integrity
 - training of maintenance personnel regarding safe work practices, relevant hazards, and the application of maintenance procedures
 - quality control procedures that verify that maintenance materials and spare equipment and parts meet design specifications
 - confirmation of maintenance personnel's and contractors' qualifications
 - procedures to review all changes - in accordance with Section 4
-

9. Pre-Start-Up Review

Policy

Taylor will require that pre-start-up reviews be completed before the start-up of new facilities or modifications to existing facilities.

Responsibility

The Field Foreman is responsible for conducting pre-start-up reviews.

Procedure

The form shown in Table 9.1 will be used to document the completion of pre-start-up reviews. The Field Foreman is responsible for completing the form. The completed form will be filed with the project file for a new facility and with the Management of Change Forms for all applicable changes or modifications.

Table 9.1 Pre-Start-Up Review Form

FACILITY NAME: _____

PROJECT DESCRIPTION: _____

REVIEW ITEM	YES	NO	N/A
Construction and installation are in accordance with specifications			
Piping is routed and valved according to the P&IDs.			
Non-destructive testing requirements have been completed.			
All protective shipping brackets and packing materials have been removed from controllers, instruments, and other equipment items.			
Actual device function test have been performed, and the control and safety logic matches the design requirements.			
Pre-service recommended by vendors has been performed.			
All spectacle blinds and other temporary isolation devices have been removed.			
All flanged joints, screwed fittings, and instrument connections have been properly tightened.			
Purge procedures provide adequate levels of safety.			
All valves are in their correct positions for start-up.			
Utility, fire fighting, and personnel safety equipment are in place and operational.			
Safe Work Practices are in place.			
Safety, Environmental, Regulatory review have been completed.			
Electrical system is complete and operational.			
Safety and Environmental information is available and complete.			
Mechanical Integrity procedures are in place.			
Training of applicable personnel has been completed.			
Operating procedures are in place and complete.			

Approved for Start-Up: _____ Date: _____
 (Field Foreman)

10. Emergency Response and Control

Policy

Taylor will maintain written emergency response plans for each facility covered by this SEMP. These plans will contain provisions for dealing with all anticipated potential emergencies. In addition, the plans will clearly assign authorities and duties in order to ensure that responses to emergencies are effective.

The readiness and effectiveness of Taylor's emergency response plans will be demonstrated by periodic drills. Taylor management and operations personnel will observe and analyze these drills to identify and correct any deficiencies.

Responsibility

- Taylor's Safety Manager is responsible for the preparation and revision of emergency response and control procedures.
 - The Field Foreman maintains medical history forms for each employee, plans and conducts announced drills, and documents each drill and its results.
 - The Operations Manager plans any unannounced drills and ensures that proper preparation for hurricane season is made annually prior to June 1.
-

Documentation

Copies of each emergency response plan will be readily available at each manned platform, at each Field Office, and at the Operations Manager's office and the Safety Manager's office in New Orleans.

Emergency action plans

Written emergency action plans will be developed for each facility that is covered by the SEMP. These plans should contain provisions for all potential emergencies that may be expected. As a minimum, this plan must include the following elements:

- emergency escape/evacuation procedures
 - procedures to be followed by employees who remain to perform or shut down critical operations before they evacuate
 - procedures to account for all employees after evacuation has been completed
-

Continued on next page...

10. Emergency Response and Control (continued)

Emergency action plans (continued)

- procedures for shutdown and/or blowdown of incoming and departing pipelines
 - rescue and medical duties for the employees who will perform them
 - the recommended method of reporting spills, fires, and other emergencies
 - names and phone numbers of people and agencies to be contacted for further information, notification, or assistance
-

Medical history

Medical history forms for each Taylor employee will be maintained by the Field Foreman at each Field Office and at a designated hospital. Participation in this program is voluntary. Medical history forms include standard data as well as information about allergies, blood types, pre-existing conditions and all insurance information necessary for emergency hospital admission. This information is sought in order to reduce treatment time and to facilitate treatment if the injured party is unconscious or delirious.

Oil spill contingency plan

Taylor's written Oil Spill Contingency Plan provides for the protection of personnel, the environment, and the equipment in case of an oil spill. The OSC Plan meets the requirements of federal regulation 30CFR250.42. This plan also includes reporting procedures and inspection schedules.

Hurricane evacuation plan

Taylor's written Hurricane Evacuation Plan is contained in the Taylor *Safety Manual*. This plan addresses the following goals, in order of importance:

1. Safety of personnel
2. Prevention of pollution
3. Protection of equipment

The Hurricane Evacuation Plan will contain procedures for preparation, hurricane alert, and secure and evacuation for hurricane.

Continued on next page...

10. Emergency Response and Control (continued)

Hurricane evacuation plan (continued)

The Operations Manager is responsible for ensuring that proper preparation for hurricane season is made annually prior to June 1.

The Operations Manager is responsible for declaring a "Hurricane Alert" and facility shutdowns and personnel evacuations.

Training Drills

Training drills shall be conducted periodically at all Taylor facilities covered by this SEMP to assure that all personnel can react to an emergency situation in a prepared, organized and confident manner.

The drills should be designed to do the following:

- train personnel in what they are to do
- verify that safety and emergency equipment performs properly
- verify that response plans and contingency plans are complete and understood by all personnel
- verify that communications are accurate and complete

The Field Foreman is responsible for planning and conducting announced drills. Unannounced drills shall be planned by the Operations Manager.

All personnel involved in a drill shall review the drill as soon as possible after the drill is completed. The Field Foreman shall document each drill to record the type of drill, the results, and the persons involved. A copy of the report shall be sent to the Safety Manager and a copy of the report shall be maintained at the manned platform.

The following are suggested drills:

- Abandon platform and/or fire drill (required monthly for each crew)
 - Spill drill (one announced and one unannounced required annually)
 - Fire related
 - Gas leaks
 - Oil leaks
 - Pipeline leaks
 - Man overboard
 - H₂S release
 - Blowout
 - Explosion
 - Hurricane
 - Handling and care of severe injuries
-

Continued on next page...

11. Investigation of Incidents

Policy

Taylor will maintain a program to investigate any incident which results in - or could reasonably have resulted in - serious safety or environmental consequences. This incident investigation program will apply to all Taylor facilities covered by this SEMP. The program's goal is to prevent similar incidents from occurring in the future.

Responsibilities

- The Field Foreman is responsible for documenting injuries.
 - The Safety Manager will evaluate all incidents and keep investigation reports on file.
 - The Operations Manager implements steps to prevent the recurrence of incidents.
 - The Safety Manager compiles an annual summary of injuries and illnesses.
-

Injury reports

All injuries occurring at a Taylor facility must be reported by the employee or contractor, regardless of the event's seriousness, to the Field Foreman. The Field Foreman will document the injury using the Taylor Field Report of Injury Form and in accordance with the accident reporting and investigation procedures presented in the *Safety Manual*.

The Field Foreman will send copies of the report to the Operations Manager and the Safety Manager.

Incident investigations

An investigation by the Safety Manager is required for any and all incidents leading to - or which could reasonably have led to - a fatality, hospitalization, lost work day, medical treatment, job transfer or termination, loss of consciousness, or a major uncontrolled release of materials to the environment.

Incident investigations should follow the procedures found in the Taylor *Safety Manual*. Investigations should begin as soon as possible after an incident, and address the following:

- the nature of the incident
 - the events of the incident
 - the factors contributing to the incident and its mitigation
-

Continued on next page...

11. Investigation of Incidents (continued)

Evaluation and follow-up

The Safety Manager will evaluate all incidents, prepare reports, and recommend corrective actions. He will consult with people who are knowledgeable in the processes involved and in the investigation techniques implemented. The Safety Manager will keep the reports on file until the next SEMP audit or the next facility hazard analysis, whichever is longer.

The report will be submitted to the Operations Manager, who will implement steps to prevent the recurrence of such an incident.

The report will be reviewed by all operating, maintenance and other personnel, including contractor personnel, assigned to the facility in which the incident occurred. The report will also be presented at safety meetings at other Taylor facilities.

Annual summary

Each facility covered by this SEMP will receive an annual summary of injuries and illness from the Safety Manager. This summary will be posted at each manned platform.

Management review

The Operations Manager and Field Foremen will meet yearly with the Chief Operating Officer and Safety Manger to discuss any accidents, spills, permit violations, citations or other incidents. At these meetings, all incidents, causes and recommended corrective actions will be reviewed, and any changes to the safety program may be recommended and ratified at that time.

12. Audit of Safety and Environmental Management Program Elements

Policy

Taylor will conduct periodic audits of its SEMP to evaluate its implementation and effectiveness. The findings of these audits will be used to adjust and improve the SEMP as necessary to ensure the safety of Taylor's employees, contractors, and visitors as well as the environment.

Objectives

The audits will confirm the following for each facility:

- that all SEMP program elements are in place
 - that the SEMP programs at each facility include the required elements
 - that each SEMP program element is implemented effectively
-

Responsibility

The Operations Manager is responsible for auditing of Taylor's SEMP program.

Methodology

The Operations Manager will appoint each audit team, which will include at least one person who is knowledgeable in the process. Auditors should be impartial regarding the facilities being audited.

The audit teams should use the following methods of inquiry:

- review of documentation
 - private interviews of various levels and disciplines of personnel
 - facility inspections
-

Schedules

The first audits will be conducted within two years of the initial implementation of this SEMP. The amount of time between audits should not exceed four years.

Each audit will include at least 15% of the fields covered by this SEMP. As much as practicable, the selected fields/facilities should include a variety of processes. The Operations Manager will approve the selection of the fields and facilities to be audited.

Continued on next page...

12. Audit of Safety and Environmental Management Program Elements (continued)

Reports

Audit findings will be documented in reports which will be submitted to the Operations Manager, who will determine any responses regarding the results. A copy of each audit report will be retained on file at Taylor's New Orleans office until the next audit for that particular facility is conducted.
